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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,148	01/12/2001	Michael K. Malone	45596/2:2	2362

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EXAMINER
KLINGER, SCOTT M

ART UNIT	PAPER NUMBER
2153	6

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/760,148	MALONE ET AL.
	Examiner	Art Unit
	Scott M. Klinger	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2001*.

2a)☐ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3,4* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 1-15 are pending.

Priority

A claim for priority from U.S. Provisional Application Number 60/176,329 has been made.

The effective filing date for subject matter in the application is 14 January 2000.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 17 January 2001 was filed after the

mailing date of 12 January 2001 on 29 January 2002. The submission is in compliance with the

provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being

considered by the examiner.

The supplemental information disclosure statement (IDS) submitted on 25 January 2002 was

filed after the mailing date of 12 January 2001 on 20 February 2002. The submission is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure

statement is being considered by the examiner.

Claim Objections

In referring to claim 7, it is suggested that the phrase "and a community information

network" on page 27, line 15, be changed to "or a community information network".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Singhal

(U.S. Patent Number 6,370,527, hereinafter "Singhal"). Singhal discloses a method and

apparatus for searching distributed networks using a plurality of search devices.

In referring to claim 1, Singhal shows,

- A root server that stores a list of multiple distributed sites each of which represented by

  metadata corresponding to directly or indirectly available information content:

  "The apparatus includes a meta-search engine device that receives a search query from a user

  device. The meta-search engine device submits the search query to a plurality of search engine

  devices and compiles the results from each of the search engine devices into a merged list. The

  merged list is then sorted and ranked according to predetermined criteria and displayed to the

  user via the user device."

  - U.S. Patent No. 6,370,527, col. 1, lines 34-41

  A list of multiple distributed sites is inherently implied in a system that submits search

  queries to multiple distributed search engines

- Multiple distributed sites each of which implemented with an information provider that is remotely located from the root server, the information provider of each of the distributed sites storing metadata corresponding to information content that is retrievable in response to a profiled information search request for search results derivable from the information content to which the metadata correspond:

  Figure 3 shows that the search engine devices 140, 150, and 160 are remotely located from the root server 130

- A profiled information communication link between the root server and each of the multiple distributed sites, the profiled information communication link enabling formation of a path for delivery of the search results to a destination site from a site or sites represented by the metadata of the profiled information search request:

  Figure 3 shows communication links between each of the search engines and the root server

In referring to claim 2, Singhal shows,

- The multiple distributed sites are configured to host and maintain their own information content while they are available for access by information search requests originating from remotely located globally accessible computer network sources:

  Search engines by definition host and maintain their own content and are globally accessible via the Internet

In referring to claim 3, Singhal shows,

- Further comprising an operating system client that delivers to the root server an information search request by a user and receives without passing through the profiled information communication link the search results retrieved from the site or sites in response to the profiled information search request:

  Figure 6 shows a flowchart of the query process, the search results are compiled at the root server and passed to the user

In referring to claim 4, Singhal shows,

- The operating system client comprises one of a network browser, an applet, or an application:

  "For simplicity of the following description of the preferred embodiments, it is assumed that the user device 100 is a personal computer. The user device 100 sends and receives communication signals to and from the network 120 via the LAP 110."

  - U.S. Patent No. 6,370,527, col. 3, lines 3-7

  A personal computer sending communication signals inherently implies an application to control the sending and receiving of said signals

In referring to claim 6

- At least one of the multiple distributed sites includes multiple levels of servers searched in response to the profiled information search request:

  Figure 3 shows that the distributed sites are search engine devices 140, 150, and 160. Search engines by definition search and index multiple distributed sites and therefore search multiple levels of servers

In referring to claim 14, Singhal shows,

- Implementing with each of the multiple distributed sites an information provider storing

  metadata that are retrievable in response to a profiled information search request for

  search results derivable from information content to which the metadata correspond:

  Figure 3 shows the distributed sites are search engines. Search engines inherently imply

  an information provider storing metadata

- Establishing a profiled information communication link between a root server that stores

  a list of multiple distributed sites each of which represented by metadata corresponding to

  directly or indirectly available information content and each of the multiple distributed

  sites storing metadata corresponding to information content that is retrievable in response

  to a profiled information search request:

  "The apparatus includes a meta-search engine device that receives a search query from a user
  device. The meta-search engine device submits the search query to a plurality of search engine
  devices and compiles the results from each of the search engine devices into a merged list. The
  merged list is then sorted and ranked according to predetermined criteria and displayed to the
  user via the user device."

  - U.S. Patent No. 6,370,527, col. 1, lines 34-41

  A list of multiple distributed sites is inherently implied in a system that submits search

  queries to multiple distributed search engines. Figure 3 shows communication links

  between each of the search engines and the root server.

- Transmitting from an operating system client to the root server a profiled information

  search request for search results derivable from the information content to which the

  metadata correspond:

Figure 6 shows a flowchart of the querying process. The client sends the request to the

root server.

- Forming a communication path for delivery of the search results to a destination site from

a site or sites represented by the metadata of the profiled information search request:

Figure 3 shows communication links between each of the search engines and the root

server

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal in view of

Broster et al. (U.S. Patent Number, 6,424,968, hereinafter "Broster").

In referring to claim 5, although Singhal shows substantial features of the claimed invention,

including the distributed information network of claim 1 (see 102 rejection above), Singhal is

silent as to the implementation and network topology of the distributed sites. Singhal does not

explicitly show at least one of the distributed sites is a local information network. Nonetheless

this feature is well known in the art and would have been an obvious addition to the system

disclosed by Singhal as evidenced by Broster.

In analogous art, Broster discloses an information management system including a database

and one or more data retrieval tools. Broster shows:

- A local information network with a local root server that stores a list of multiple

   distributed local sites each of which represented by local metadata corresponding to

   directly or indirectly available information content; and multiple distributed local sites

   each of which implemented with an information provider in which are stored local

   metadata corresponding to information content that is retrievable in response to a local

   profiled information search request for search results derivable from the information

   content to which the local metadata correspond:

*"The search engine 14 may be utilized to perform the actual search of the information. The
search engine may accomplish this task by searching its own local information repository 20 that
consists of a database of objects representing information sources ranging from FTP sites to
local Forums®."*

- U.S. Patent No. 6,424,968, col. x, lines x-X

*"It should be noted that the data storage means of embodiments of the present invention may
comprise a single database or a plurality of databases. For instance, one or more search,
retrieval and/or analysis tools may be provided with its own database, in addition to there being
a system database. The (or any) database may of course also be distributed or centralised."*

- U.S. Patent No. 6,424,968, col. x, lines x-X

Given these teachings, a person of ordinary skill in the art would have readily recognized the

desirability and advantages of modifying at least one of the distributed sites of Singhal so as to

implement a local information network, such as taught by Broster, in order to search the database of said local information network.

Claims 7, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal in view of Bowen et al. (U.S. Patent Number 6,094,649, hereinafter "Bowen").

In referring to claims 7, 10, and 15, although Singhal shows substantial features of the claimed invention, including the distributed information network of claim 1 (see 102 rejection above), Singhal is silent as to the network topology of the distributed sites. Singhal does not explicitly show at least one of said sites is a peer-to-peer network. Nonetheless this feature is well known in the art and would have been an obvious addition to the system disclosed by Singhal as evidenced by Bowen.

In analogous art, Bowen discloses a system for keyword searches of structured databases. Bowen shows:

In referring to claims 7 and 10,

- A search engine that can be implemented on a peer-to-peer network:

  "One of many possible networks suitable for use according to the invention is shown in FIG. 1, as indicated by the arrow labeled 100. The network 100 includes a server 102 and several clients 104; other suitable networks may contain other combinations of servers, clients, and/or peer-to-peer nodes, and a given computer may function both as a client and as a server."

  - U.S. Patent No. 6,094,649, col. 7, lines 8-15

In referring to claim 10,

- Multiple distributed peer local sites each of which implemented with an information provider:

  Peer-to-peer networks have multiple distributed peer local sites by definition

- A peer local root server that stores a list of the multiple distributed peer local sites, each of which represented by metadata corresponding to directly or indirectly available information content:

  A search engine that searches peer-to-peer nodes and is accessible over a computer network inherently implies a list of the multiple peer sites on a local root server

- An access token issued in response to receipt of a search request by a qualified one of the multiple distributed local sites to provide an approved path for delivery of peer local search results that are responsive to the search request:

  "In this embodiment, information needed to connect the tool 206 to the database 202 includes: a file name (full path) for the exposure definitions 402 and other configuration values; directory location(s) for HTML output template files; a database name (displayed at top of every output HTML page 210 in case multiple databases are crawled and indexed together); and a database user ID, password, and connection string (used by the tool 206 and the database reader 410 to log into and read the database 202). In one alternative embodiment, the information provided to the tool 206 also includes a directory location for an HTML index file 214."

  - U.S. Patent No. 6,094,649, col. 14, line 66 – col. 15, line 10

  A user ID, password, and connection string constitute an access token

In referring to claim 15,

- Providing a communication link to the operating system client to deliver to it the search results retrieved from the destination site or sites in response to the profiled information search request:

A communication link to deliver search results is inherently implied in a system that sends a search request and receives the results of said search request

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing one (or more) of the search engine devices of Singhal as a peer-to-peer network, such as taught by Bowen, in order to search structured databases that are located on such networks.

Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal in view of de Hita et al. (U.S. Patent Number 6,081,774, hereinafter "de Hita"). Although Singhal shows substantial features of the claimed invention, including the distributed information network of claim 1 (see 102 rejection above), Singhal does not show categorizing a search query by topic. Nonetheless this feature is well known in the art and would have been an obvious (addition/modification) to the system disclosed by Singhal as evidenced by de Hita.

In analogous art, de Hita discloses a natural language information retrieval system and method. de Hita shows a query parser to correspond said query to topic profiles:

"In another embodiment, the linguistic array generator includes a token attribute generator that identifies and characterizes tokens and sentences in the database text file and populates the array with the identified attributes, a syntactic tagger that supplements the array with morphological and

syntactic data to identify the relative importance of each token in the array, and a parse filter that filters tokens from the array that are not likely to assist in matching topics of a natural language query to topics of the database text file."

- U.S. Patent No. 6,081,774, col. 4, line 3-11

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Singhal so as to correspond the queries to specific topics, such as taught by de Hita, in order to generate more reliable search results.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal in view of de Hita and in further view of Chen (U.S. Patent Number 6,349,307, hereinafter "Chen").

In referring to claim 9, although Singhal in view of de Hita shows substantial features of the claimed invention, including the system of claim 8 (see 103 rejection above), Singhal in view of de Hita does not show the databases searched are based on the topic profiles. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Singhal in view of de Hita as evidenced by Chen.

In analogous art, Chen discloses cooperative topical servers with automatic prefiltering and routing. Chen shows the distributed sites are associated with topic databases wherein the query parser identifies site servers qualified to be searched:

"The database 335 contains the topic-based data structured discussed above with respect to FIG. 2. In a preferred embodiment, the database 335 is distributed throughout the federation based upon the topics associated with each server. Also, as stated above, in a preferred embodiment, each of the servers comprise the blocks illustrated in FIG. 3. For ease of reference, the term "host-server" is

used to identify the server that contains a given block. The document-routing module 330 updates the database 335 directly for each of the topics that are associated with the its host-server, and communicates the document identification and topics to a corresponding document-routing module at each of the other servers that contain one or more of the document topics. Each of these other document-routing modules update the database 335 for their corresponding host-server topics. Correspondingly, the document-routing module 330 is configured to receive document identifications and topics from other servers, and updates the database 335 directly for each of the received topics that are associated with its host-server."

- U.S. Patent No. 6,349,307, col. 6, line 52 – col. 7, line 4

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Singhal in view of de Hita so as to search databases based on topic, such as taught by Chen, in order to only search relevant databases and search engines.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal in view of Bowen and in further view of Bhimani ("Securing the Commercial Internet", hereinafter "Bhimani").

In referring to claim 11, although Singhal in view of Bowen shows substantial features of the claimed invention, including a web-based distributed information network of claim 10, Singhal in view of Bowen does not explicitly show the access token is issued in accordance with a process of encryption and decryption with a public/private key pair. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Singhal in view of Bowen as evidenced by Bhimani.

In analogous art, Bhimani discloses common security measures used on the Internet. Bhimani shows the access token is issued in accordance with a process of encryption and decryption with a public/private key pair:

> *"To provide the security services mandated by electronic commerce, most solutions also use asymmetric, or public-key, cryptography. In asymmetric systems, two mathematically linked keys are used; if one is used to encrypt a message, the other key must be used to decrypt it. One of the two keys is kept secret and is referred to as the "private" key. This private key can be thought of as representing the identity of its owner; for this reason, its secrecy is crucial. The second key, called the "public" key, is made available to the world. However, since asymmetric systems are generally not as computationally efficient as symmetric systems, they are usually used in conjunction with symmetric systems to provide key distribution facilities and digital signature capabilities. Digital signatures perform a function in the electronic world similar to the function of paper signatures in the real world. Since the private key of an entity is known only to the key's owner, using the key is viewed as constituting proof of identity. Thus, if a message is encrypted using a user's private key, it can be deduced that the message was "signed" directly by the user."*

> *- Anish Bhimani, "Securing the commercial Internet", Communications of the ACM, Vol. 39, No. 6, (June 1996), page 32*

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Singhal in view of Bowen so as to implement public/private key cryptography, such as taught by Bhimani, in order to prevent eavesdropping, password "sniffing", and data modification.

In referring to claims 12 and 13, although Singhal shows substantial features of the claimed invention, including the distributed information network of claim 1 (see 102 rejection above), Singhal is silent as to the network topology of the distributed sites. Singhal does not explicitly

show a local information network. Nonetheless this feature is well known in the art and would

have been an obvious addition to the system disclosed by Singhal as evidenced by Bowen.

In analogous art, Bowen discloses a system for keyword searches of structured databases.

Bowen shows:

In referring to claim 12,

- Multiple distributed local sites implemented with an information provider; a local root

    server with a list of the multiple sites:

    Figure 1 shows one example of an embodiment of the local information network

In referring to claims 13,

- A search engine that can be implemented on a peer-to-peer network:

    *"One of many possible networks suitable for use according to the invention is shown in FIG. 1,
    as indicated by the arrow labeled 100. The network 100 includes a server 102 and several clients
    104; other suitable networks may contain other combinations of servers, clients, and/or peer-to-
    peer nodes, and a given computer may function both as a client and as a server."*

    - U.S. Patent No. 6,094,649, col. 7, lines 8-15

Given these teachings, a person of ordinary skill in the art would have readily recognized the

desirability and advantages of implementing one (or more) of the search engine devices of

Singhal as a local information network, such as taught by Bowen, in order to search structured

databases that are located on such networks.

Although the combined teachings of Singhal in view of Bowen show substantial features

of the claimed invention, they do not show a process of encryption and decryption with a public/private key pair. Nonetheless this feature is well known in the art and would have been an obvious addition to the system disclosed by Singhal in view of Bowen as evidenced by Bhimani.

In analogous art, Bhimani discloses common security measures used on the Internet. Bhimani shows a process of encryption and decryption with a public/private key pair:

> *"To provide the security services mandated by electronic commerce, most solutions also use asymmetric, or public-key, cryptography. In asymmetric systems, two mathematically linked keys are used; if one is used to encrypt a message, the other key must be used to decrypt it. One of the two keys is kept secret and is referred to as the "private" key. This private key can be thought of as representing the identity of its owner; for this reason, its secrecy is crucial. The second key, called the "public" key, is made available to the world. However, since asymmetric systems are generally not as computationally efficient as symmetric systems, they are usually used in conjunction with symmetric systems to provide key distribution facilities and digital signature capabilities. Digital signatures perform a function in the electronic world similar to the function of paper signatures in the real world. Since the private key of an entity is known only to the key's owner, using the key is viewed as constituting proof of identity. Thus, if a message is encrypted using a user's private key, it can be deduced that the message was "signed" directly by the user."*

> *- Anish Bhimani, "Securing the commercial Internet", Communications of the ACM, Vol. 39, No. 6, page 32, (June 1996)*

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Singhal in view of Bowen so as to implement public/private key cryptography, such as taught by Bhimani, in order to prevent eavesdropping, password "sniffing", and data modification.
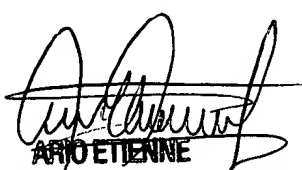

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Scott M. Klinger
Examiner
Art Unit 2153

smk

ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100